ADDENDUM

New Fumigant Safety Measures

Learning Objectives

- ☆ **Explain when handlers must wear respiratory protection.**
- ☆ **Describe the restrictions on tarp removal and perforation.**
- ☆ **Identify who is responsible for an FMP and how long such plans need to be kept.**
- ☆ **Outline the requirements for either monitoring a site or providing emergency response information to neighbors.**
- ☆ **Explain the purpose of buffer zones.**
- ☆ **Describe who may and may not be in a buffer zone during the buffer zone period.**
- ☆ **Outline what steps you must take to secure permission for buffer zones that include structures or extend into neighboring land.**
- ☆ **Specify where must you post buffer zones.**
- ☆ **Be aware that fumigant labels may require applicators to be trained through registrant-training programs.**

Know the Law

- ★ **Each topic covered in this chapter is a legal requirement.**

New Fumigant Labeling Requirements

Since the "Agricultural / Soil Fumigation" manual (Third Edition) was printed, the U.S. Environmental Protection Agency (EPA) implemented new risk-mitigation measures for soil fumigant use to protect pesticide handlers, reentry workers, and bystanders from risks resulting from exposure to these pesticides.

The new labeling requirements came out of the EPA's Reregistration Eligibility Decision (RED) process. The EPA reviewed most soil fumigants together as a group to ensure that similar risk assessment tools and methods were used for all, and risk management approaches were consistent.

The soil fumigants methyl bromide, chloropicrin, dazomet, metam sodium, metam potassium (including methyl isothiocyanate or MITC), and iodomethane are all subject to the new requirements. The EPA included another soil fumigant, 1,3-dichloropropene (Telone) in the reevaluation for comparison purposes, but because its reassessment was completed in 1998 the new labeling requirements are not required for products containing Telone as the sole active ingredient. However, Telone products that contain chloropicrin will be subject to new requirements. EPA will be looking at all the fumigants again in 2013, and changes to the telone label may then occur.

Most of the measures summarized below apply to all of the soil fumigants (e.g., fumigant management plans). However, some measures are specific to individual fumigants (e.g., buffer distances).

TIMETABLE FOR NEW LABEL REQUIREMENTS

Some of the new risk-mitigation measures will appear on labels for the 2010 growing season. Other measures will begin in 2011. As always, follow label directions explicitly when using any pesticide.

Implementation Schedule for Soil Fumigant Risk Mitigation Measures		
Risk Mitigation Measure	**2010**	**2011**
Restricted-Use Pesticides	✓	
Application Method and Rate Restrictions	✓	
Agricultural Worker Protections	✓	
Good Agricultural Practices	✓	
Fumigant Management Plans (partial)	✓	
Fumigant Management Plans (full)		✓
Emergency Preparedness and Response		✓
Buffer Zones and Buffer Posting		✓
Registrant Applicator Training		✓

RESTRICTED-USE

All soil fumigants will be classified as restricted-use pesticides. This includes metam sodium and dazomet, which were not previously classified as RUPs. This means that all soil fumigant applicators in Wisconsin need to be certified in this subcategory before using these pesticides.

APPLICATION METHOD AND RATE RESTRICTIONS

The EPA is restricting certain fumigant application methods previously allowed. New labels will also have lower maximum application rates to reduce the potential for inhalation exposure and risk.

AGRICULTURAL WORKER PROTECTIONS

Anyone engaged in activities that are part of the fumigation process are considered "handlers." Handler activities include operating fumigation equipment; assisting in the application of the fumigant; monitoring fumigant air concentrations; and installing, repairing, perforating, and removing tarps.

Respiratory Protection

New labels require handlers to either stop work or put on respirators if they experience sensory irritation. If respirators are still not stopping sensory irritation (for example, in situations involving very high air fumigant concentrations), labels require handlers to stop work and leave the area.

☞ Handlers must **always** wear air-purifying respirators when working in an area where the fumigant used contains 80% or greater methyl bromide.

Labels also require handlers to be:

- Fit-tested to ensure respirators will provide the protection they are designed to provide. (Note: fit-testing and fit-checking of respirators are explained in your base category manual in the chapter, "Protecting Yourself."),
- Trained in how to properly use a respirator, and

- Determined to be physically fit enough to wear the respirator to ensure they have no health problems such as a heart condition that could make use of the respirator dangerous.

Tarp Perforation and Removal

Handlers perforating and removing tarps may be exposed to fumigants. To reduce these exposures, labels require:

- A minimum interval of 5 days between application and tarp perforation,
- A minimum interval of 2 hours between perforation and tarp removal,
- That handlers stop work or use of respiratory protection if irritation is detected, and,
- Use of mechanical devices (e.g., using all-terrain vehicles with cutting implements attached) with few exceptions (i.e., areas less than 1 acre, at the start of a row, and during flood prevention activities).

Entry-Restricted Period

Current labels allow worker reentry into fumigated fields two to five days after applications are complete. Depending on the method of application, new labels will require a minimum of five days before worker reentry or until after tarps are perforated and removed.

GOOD AGRICULTURAL PRACTICES

Some practices previously listed as "recommended" on fumigant labels will be **required** practices on new labels. Examples of good agricultural practices include proper soil preparation/tilling, ensuring optimal soil moisture and temperature, appropriate use of sealing techniques, equipment calibration, and weather criteria.

FUMIGANT MANAGEMENT PLANS (FMPS):

You will need to prepare a written, site-specific fumigant management plan (FMP) before fumigations begin. These plans will help prevent accidents and misuse and will include emergency response plans and steps to take in case an accident occurs.

You must verify in writing that the FMP is current and accurate before beginning the fumigation. A post-fumigation summary report describing any deviations that may have occurred from the FMP will also be required within 30 days of the end of the application.

The applicator and the owner/operator of the fumigated field must keep the FMP and post-fumigation summary report for two years and make them available upon request to federal, state, tribal, and local enforcement officials.

Components of FMPs

Elements that must be included in soil FMPs are:

- General site information,
- Applicator information,
- Application procedures,
- Measurements taken to verify compliance with good application practices,
- How buffers were determined,
- Worker protection information,
- Procedures for air monitoring,
- Posting procedures,
- Training of applicators supervising fumigations,
- Communication among key parties,
- Hazard communication procedures,
- Record keeping procedures,
- Site-specific response and management activities,
- Emergency response plans and procedures,
- Procedures for controlling fumigant releases in case of problems during or after the application.

☞ Most parts of an FMP will be required in 2010 except those dealing with risk mitigation measures that will not be implented until 2011 (e.g., buffer zones and buffer posting). For a template to use when preparing your own FMP, see the EPA's website at: epa.gov/oppsrrd1/reregistration/soil_fumigants

☞ As noted earlier, some of the risk mitigation measures will appear on labels in 2010, others in 2011. Measures discussed above take effect in 2010 while those below will begin in 2011 (with the exception noted just above for FMPs).

EMERGENCY PREPAREDNESS AND RESPONSE

Applicators need to be prepared in the case of accidents or other emergencies. Early detection and appropriate response to accidental chemical releases is an effective means of reducing risk. Being prepared for accidents is important to avoid the risks posed by fumigants.

Response and Management Activities

The EPA is requiring site-specific measures in areas where bystanders may be near fumigant buffer zones. You can either monitor the buffer perimeter or provide emergency response information directly to neighbors.

Monitoring

If you choose to monitor the buffer perimeter, you must monitor during the full buffer zone time period at times when the greatest potential exists for fumigants to move off site. If you experience sensory irritation, you must implement the emergency response plan outlined in the FMP.

Provide Response Information

If you choose to provide emergency response information directly to neighbors, you must ensure that nearby residents and business owners/operators have been provided the response information at least one week prior to fumigant application. The method for distributing information to neighbors must be described in the FMP.

BUFFER ZONES

You must establish a buffer zone around treated fields or greenhouses to reduce the chance that bystanders will be exposed to fumigants that leave the site of application. The buffer zone extends from the edge of the treated area equally in all directions.

Buffer Zone Size

Buffer zone distances are variable, depending on the site conditions, size of the area treated, application rate, and equipment used. You will find buffer zone tables on product labels. Buffer zones may be reduced by using buffer "credits" that encourage applicators to use practices that reduce emissions (e.g., use of high-barrier tarps).

Other credits will also be available for site conditions that reduce emissions (e.g., high organic or clay content of soils). Regardless of credits, the smallest allowable buffer zone will be 25 feet.

Buffer Zone Access

You must make sure that all non-handlers including field workers, nearby residents, pedestrians, and other bystanders are excluded from the buffer zone during the "buffer zone period." The buffer zone period starts at the moment of fumigant application to the soil and lasts for at least 48 hours after the application has ended. Only handlers who have been properly trained and equipped according to EPA's Worker Protection Standard (WPS) and label requirements may be in the buffer zone during the buffer zone period.

Buffer Zone Control

Remember that buffer zones extend beyond the actual application site. Therefore it is very important to examine what areas or structures may be in the potential buffer zone and who has control over those areas.

If the person who owns or controls the site being fumigated cannot meet the requirements outlined below for a buffer zone that extends onto neighboring property, then they will need to alter their application to reduce the size of the buffer zone so that it is located on land they do own or control. Those alterations include reducing the application area, reducing the application rate, using buffer credits, or some other means of reducing the buffer zone size.

Structures in Buffer Zones

Buffer zones may **not** include buildings used for storage, such as sheds, barns, or garages (even when such structures reside on land under control of the owner or operator of the fumigation site), unless:

- The storage buildings are not occupied during the buffer zone period, **and**
- The storage buildings do not share a common wall with an occupied structure.

Residential Areas in Buffer Zones

Buffer zones may **not** include residential areas (including employee housing, private property, buildings, commercial, industrial, and other areas that people may occupy or outdoor residential areas, such as lawns, gardens, or play areas) unless,

- The occupants give written agreement they will voluntarily vacate the buffer zone during the entire buffer zone period, **and**
- Reentry by occupants and other non-handlers does not occur until the buffer zone period has ended, **and**
- For formulations with greater than 80% methyl bromide, air monitoring with direct-read instruments shows concentrations are below action levels before reentry is permitted.

Agricultural Areas in Buffer Zones

Buffer zones may **not** include agricultural areas owned/operated by others, unless:

- The owner/operator of the application block can ensure the buffer zone will not overlap with a buffer zone from any adjacent property owners, taking into account the amended requirements for overlapping buffers, **and**
- The owner/operator of the areas that are not under the control of the applicator provides written agreement to the applicator that they, their employees, and other persons will stay out of the buffer zone during the entire buffer zone period.

Public Areas in Buffer Zones

Buffer zones may **not** include publicly owned and/or operated areas (e.g., parks, sidewalks, walking paths, playgrounds, athletic fields, etc), unless:

- The area is not occupied during the buffer zone period, **and**
- Entry by non-handlers is prohibited during the buffer zone period, **and**
- Written permission is given by the appropriate state and/or local authorities to include public areas in the buffer zone.

Transit Exemption For Buffer Zones

Vehicular and bicycle traffic on public and private roadways through the buffer zone is permitted.

Buffer Zone Posting

☞ Note that the buffer zone sign is **in addition to** the signs that must be posted at the actual site of application (the treated area sign). **Both** signs are required. We discussed treated area posting in the "Fumigation Regulations" chapter of the subcategory manual *Agricultural / Soil Fumigation.* The discussion below pertains only to posting of buffer zones.

For buffer zones to be effective, bystanders need to be informed about the location and timing of the fumigation to ensure they do not enter the buffer zone. Therefore, fumigant labels will require that buffer zones be posted (figure 1) at usual points of entry and along likely routes of approach to the buffer unless:

- A physical barrier prevents access to the buffer, or
- All of the area within 300' of the buffer is under the control of the owner/operator.

"DO NOT ENTER/NO ENTRE,"

"[Name of fumigant] [Name of product] Fumigant BUFFER ZONE,"

[contact information for the certified applicator in charge of the fumigation]

Figure 1. Buffer zone signs must contain the information outlined in the figure above. Signs also must meet the general standards outlined in the Worker Protection Standard (WPS) for text size and legibility. Fumigant registrants (companies producing fumigants) must provide generic buffer zone posting signs that meet these criteria at points of sale for applicators to use.

APPLICATOR AND HANDLER TRAINING PROGRAMS

The EPA is requiring fumigant registrants (companies that produce and register fumigants for use) to develop and implement training programs for applicators. Once the training requirement appears on soil fumigant labels in 2011, getting certified in this subcategory by passing an exam that includes the new risk-mitigation measures may fulfill this requirement in place of a registrant training program (although this is still being worked out at the time of this writing).

For More Information

For more information on these new requirements, along with fact sheets for many of the topics, see the EPA's website at: epa.gov/oppsrrd1/reregistration/soil_fumigants

Additional Posting Requirements

Buffer zone posting signs must be placed at all usual points of entry and along likely routes of approach from areas where people who are not under the land owner/applicator's control may approach the buffer zone. Examples of points of entry include, but are not limited to, roadways, sidewalks, paths, and bike trails. Examples of likely routes of approach are the area between a buffer zone and a roadway, or the area between a buffer zone and a housing development.

The printed side of the sign must face away from the treated area toward areas where people could approach. Signs must remain legible the entire posting period.

Signs must be posted before the application begins and remain posted until the buffer zone period has expired. Signs must be removed within three days after the end of the buffer zone period.

Exception: If multiple connecting blocks are fumigated within a 14-day period, the entire edge of those blocks' buffer zones may be posted. The signs must remain posted until the last buffer zone period expires and signs may remain posted until three days after the buffer zone period for the last block has expired.

Registrant Training and Outreach

Besides developing training for applicators, the EPA is also requiring registrants to prepare and disseminate training information and materials for:

- Fumigant handlers (those working under the supervision of the certified applicator in charge of fumigations), and
- First responders in high fumigant use areas.

Registrants must also develop and implement community outreach programs to ensure that information about fumigants and safety is available within communities where soil fumigation occurs.

Addendum: Learning Objectives Worksheet

1) Explain when handlers must wear respiratory protection.

2) Describe the restrictions on tarp removal and perforation.

3) Identify who is responsible for an FMP and how long such plans need to be kept.

4) Outline the requirements for either monitoring a site or providing emergency response information to neighbors.

5) Explain the purpose of buffer zones.

6) Describe who may and may not be in a buffer zone during the buffer zone period.

7) Outline what steps you must take to secure permission for buffer zones that include structures or extend into neighboring land.

8) Specify where must you post buffer zones.